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ABSTRACT

Designed for use by teachers, students, and bus drivers, this guidebook provides suggestions, background information, and exercises to prepare participants to take part in New Jersey's County Park Program. First, scheduling information, recommendations concerning clothing, checklists of things to bring, safety tips, and a map are presented. Next, for each outing, the guidebook suggests activities to help students prepare for the trip, offers background information on the site, presents homework assignments to be completed after the trip, and provides readings on related topics. The following activities are included: (1) at Poricy Park, students visit a colonial farmhouse, take a nature hike, and search for fossils; accompanying materials explain what an ecosystem is; (2) at Hartshorne Woods Park, students collect leaves and take rubbings from the bark of different trees; accompanying information is provided on tombstone rubbings; (3) at Sandy Hook Park, students collect sea creatures found along the shore and visit historical fortifications and a lighthouse; instructions are presented for sand casting and goyataku, Japanese fish printing; and (4) at Holmdel Park, students take a canoe trip and make a pond study; learning activities are provided on the water cycle, survival on a desert island, and creating a flotsam and jetsam display board. (EJV)

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THE TOPIC IS THE COUNTY PARKS

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by David Grant
Susan Draxler
Patrice Wyzga

Community Services
BROOKDALE COMMUNITY COLLEGE

JC 870 251

COUNTY PARKS PROGRAM

These materials are for use by the teachers, students and bus drivers involved in the County Parks Programs. Suggestions are made to prepare all of the participants so that they can fully benefit from each activity

SCHEDULING

Scheduling is through David Grant at the Sandy Hook office (Box 533, Ft. Hancock, NJ, 07732, 201-872-2284). Schools should adhere to the prearranged schedules and plan to go "rain-or-shine". Feel free to check with us a day or so in advance if the prediction is for really severe weather. Postponements can be made then or at last resort on the morning of the program.

WHAT TO WEAR

Specific suggestions for clothing are made for each program. Students should always be prepared for rain however. A small back-pack or gym bag is recommended to carry a raincoat, extra sweatshirt, socks, sneakers and snacks. If the students are prepared, weather conditions are generally not a problem. Small pocket notebooks are needed as well as a pen or pencil. Hats are important for cold or sunny days. Please bring an appropriate one.

Extra sneakers are a must if the students are returning to class later.

Teachers may or may not want the students to bring money. Gift shops are open at Poricy Park, Twin Lights and Sandy Hook with items costing 15¢ and up. Snacks are available at Holmdel Park and Sandy Hook. Both services are limited, but popular with the students.

CHECK LIST

Students

___Rain gear
___Dry seakers, and socks
___Old sneakers for wading in the water
___Extra sweatshirt
___Lunch
___Drink & snacks
___Hat or Sunvisor
___Back-pack or gym bag
___Notebook and pen or pencil
___Zip-lock bag for specimens
___Assignment from the previous week
___Hand lens or magnifying glass
___Binoculars or camera (optional)
___Money for drinks (where available) or gift shops (where available (optional)

Teachers

___First-aid kit (Bandaids, cream, tweezers, beesting lotion)
___Emergency phone numbers (School, Sandy Hook, Brookdale, Parents)
___Medical (considerations for any appropriate students (Family Physician's name)
___Lunch and extra drinks
___Garbage bag for wet clothes

Driver-Maps

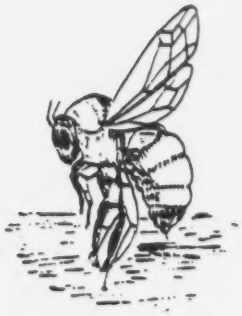
___Maps
___Phone numbers
___Lunch & extra drinks
___Garbage bag for lunches, etc.

SAFETY

Students must stay with their group leader and on the trails at all times. Swimming is not permitted. For any water activities (canoeing, collecting, wading) sneakers must be worn at all times. Please do not run along the paths or climb on any trees, rocks or fortifications unless instructed to do so by your group leader.

Do not pick flowers or leaves and do not disburb any wildlife. Each place we visit has unique and interesting creatures that should be left unharmed by our visit .

Wolf Spider
Holmdel Park



Bumble Bee
Canoe Trip

Mushroom
Hartshorne Woods

Poison Ivy
Poricy Park

Prickley Pear Cactus
Sandy Hook

Hartshorne Woods
Twin Lights
Highlands, NJ

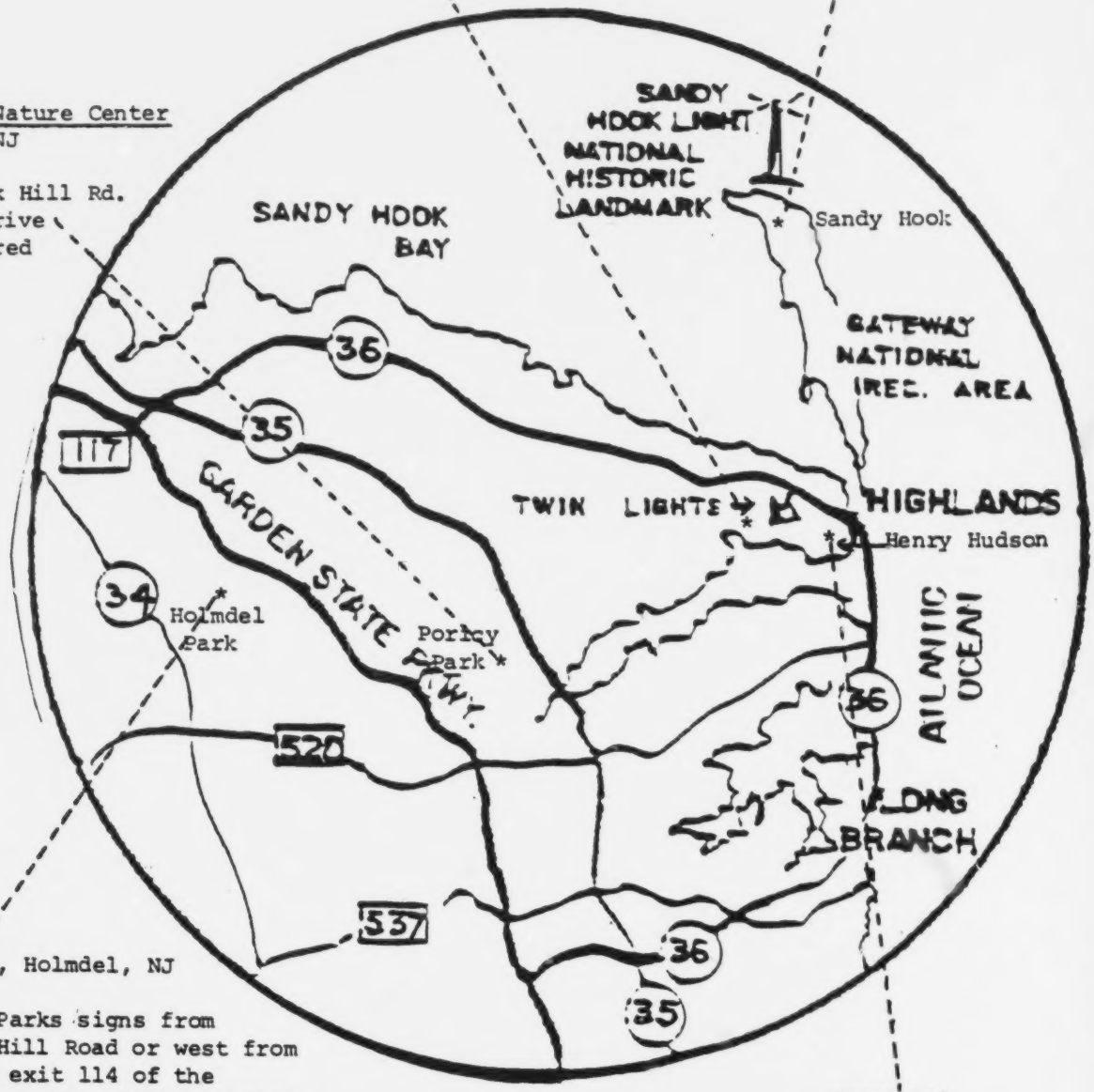
Rt. 36 to the western side of the Highlands Bridge. Follow State Park signs up the hill to the Museum.

Sandy Hook
Highlands, NJ
Bldg. 53, Brookdale College

Rt. 36 to the Park. Follow signs to Fort Hancock (about 3 3/4 miles) Bldg. 53 is just west of the lighthouse.

Poricy Park Nature Center
Middletown, NJ

Rt. 35 to Oak Hill Rd. entrance. Drive down to the red farm house.



Holmdel Park
Longstreet Rd., Holmdel, NJ

Follow County Parks signs from Rt. 34 or Red Hill Road or west from the Middletown exit 114 of the Parkway. Meet at the shelter building across from the Longstreet Farm.

Canoe Trip
Henry Hudson High School
1 Grand Tour, Highlands, NJ

RT. 36 to the Twin Lights Museum driveway. Continue past the driveway to 1 Grand Tour. Meet at the entrance across the street to the school parking lot. Hartshorne Woods is across the street.

PORICY PARK - Oakhill Rd.,Middletown (842-5966)
Meet: At Nature Center
Activity: Colonial Life, Meadow and Stream Study, Fossil Collection
Bring: Notebook, Ziplock Bag, Wading sneakers, hat

Suggested Preparations:

The Murray Farmhouse is a Revolutionary War-era restored farm. Students will participate in Household chores and see a short movie about the Revolutionary War.

After a nature hike, where fields and water systems will be studied, students will finish the day studying fossils.

Here are some dates and terms the students should be aware of:

July 4, 1776
George Washington
Tory, Loyalist
Patriot
British
Farmhouse
Barn
Hearth
Pond
Stream
Swamp
Spring
Fossil
Geology
Sedimentary Rock

A short review of the War of Independence and local history during that period is important to make our visit here more meaningful to the students. Joseph Murray, an Irish immigrant farmer, was a patriot who was assasinated by Tories. The farmhouse we visit pre-dates the war.

Activities afield will include: an awareness of trees and other plants, water sources and courses, bird and animal signs. Don't forget hand-lens.

The fossils we'll find are marine creatures - mostly shells - that lived here during the Cretaceous Period (ending 63 million years ago). This strata is an ancient seafloor that was deposited at the time of the great extinction of the dinosaurs. Occasionally, shark and dinosaur teeth are found here. The creek is very shallow and the students will be anxious to get their feet wet. Please consider this in your preparations.

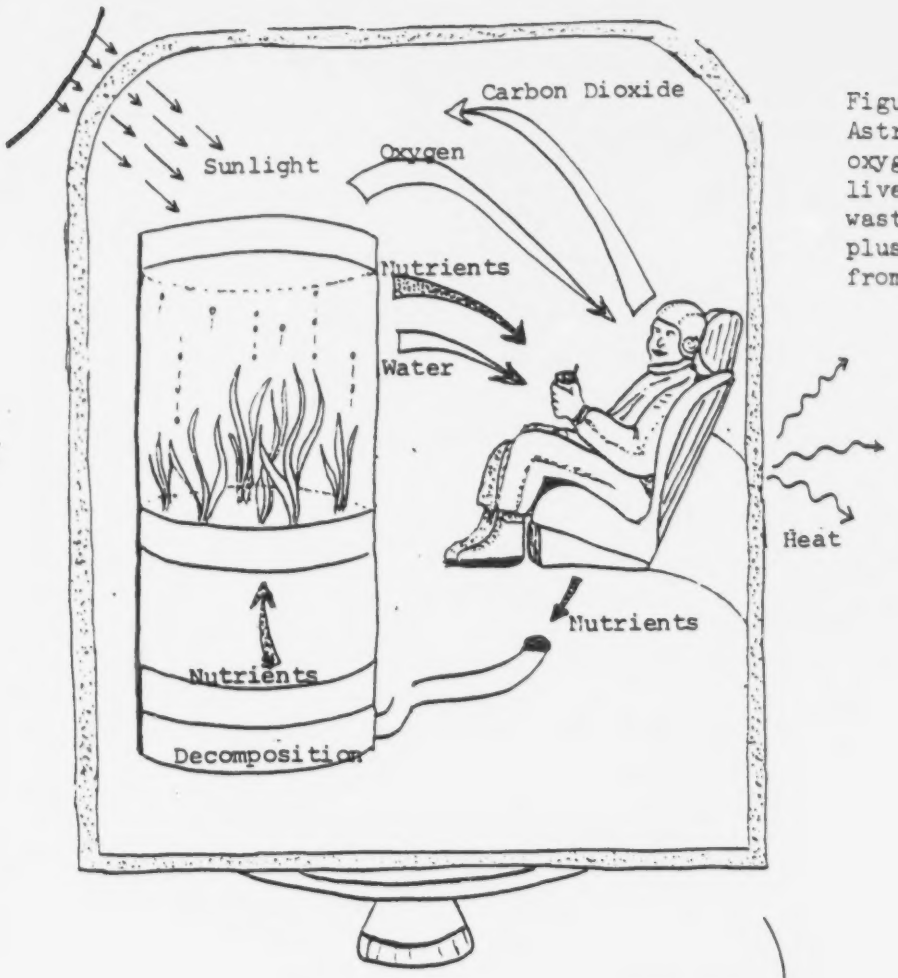


Figure 1. Spaceship ecosystem. Astronaut lives on food and oxygen produced by algae. Algae live on carbon dioxide and body wastes produced by astronaut plus a source of energy, light, from the outside.

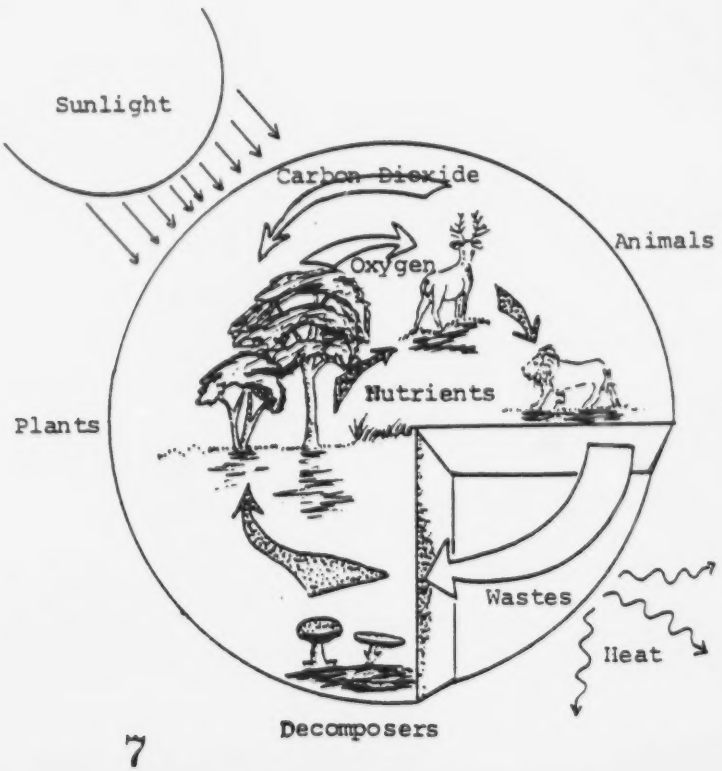


Figure 2. The entire Earth is a spaceship functioning in the same way as the small system above. It also needs a source of energy from the outside.

WHAT IS AN ECOSYSTEM?*

The Structure of an ECOSYSTEM

An ecosystem is a community of plants and animals in their environment. An ecosystem can be divided into two parts:

The non-living and the living

FIRST: Identify the non-living parts by putting the numbers in the right circles.

1- The sun - source of energy
2- The clouds - source of water
3- The soil - source of nutrients

NEXT: Identify the living parts by putting the numbers in the right circles.

4- Plants- the producers
5- Animals - the consumers
6- Bacteria and fungi - the decomposers

NEXT: Divide the non-living from the living with a black line across the picture.

Connect the circles with colored arrows. If you do it properly, you will be able to see the flow of ENERGY, WATER and NUTRIENTS (non-living parts) through the LIVING parts of the ecosystem.

Color key: Sun/energy - Yellow
Clouds/water - Blue
Soil/nutrients - Brown

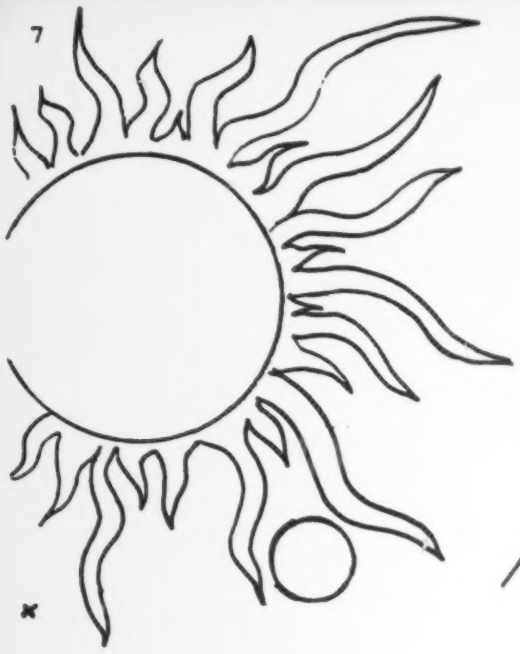
Numbers 1, 2, 3 should be connected to number 4, using the proper colored arrows (yellow, blue and brown).
Plants (producers) need these three NON-LIVING things (sunlight energy, water, nutrients).
Three colored arrows should point from plants (4) to CONSUMERS (5), because animals receive their ENERGY, NUTRIENTS and some of their WATER from the plants they eat.

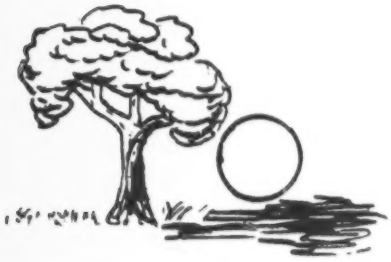
Three colored arrows should point from animals (5) to DECOMPOSERS (6), because bacteria and fungi receive their ENERGY, NUTRIENTS and some of their WATER from the animals and plants that have died.

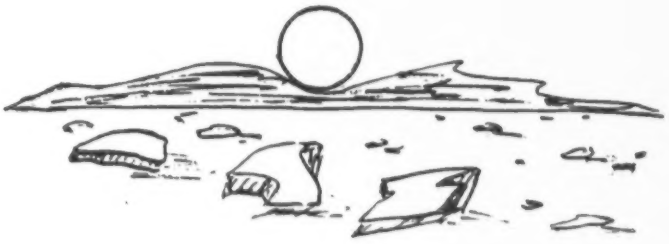
Finally, connect a bacteria and fungi (6) with blue and brown arrows up to the soil (3), because water and nutrients are recycled (used over and over again) in the ECOSYSTEM. One final blue arrow should point from the soil (3) to the clouds (2), because water is evaporated from the earth into the atmosphere.

One thing is not recycled in the ECOSYSTEM - it is ENERGY. ENERGY comes from the sun and is stored in the PRODUCERS as plant tissue. This ENERGY is used up by CONSUMERS and DECOMPOSERS when they use PRODUCERS for their food.

*NOTE: To complete this you will need colored pencils or crayons (Yellow, blue, brown)







Homework - Poricy Park

Think of a description for each of today's activities. It should express your feelings about what we did or experienced. Then use that word in a sentence to describe your experience today.

1. Colonial Farmhouse word _____

   Sentence _____

   _____

2. Nature Hike word _____

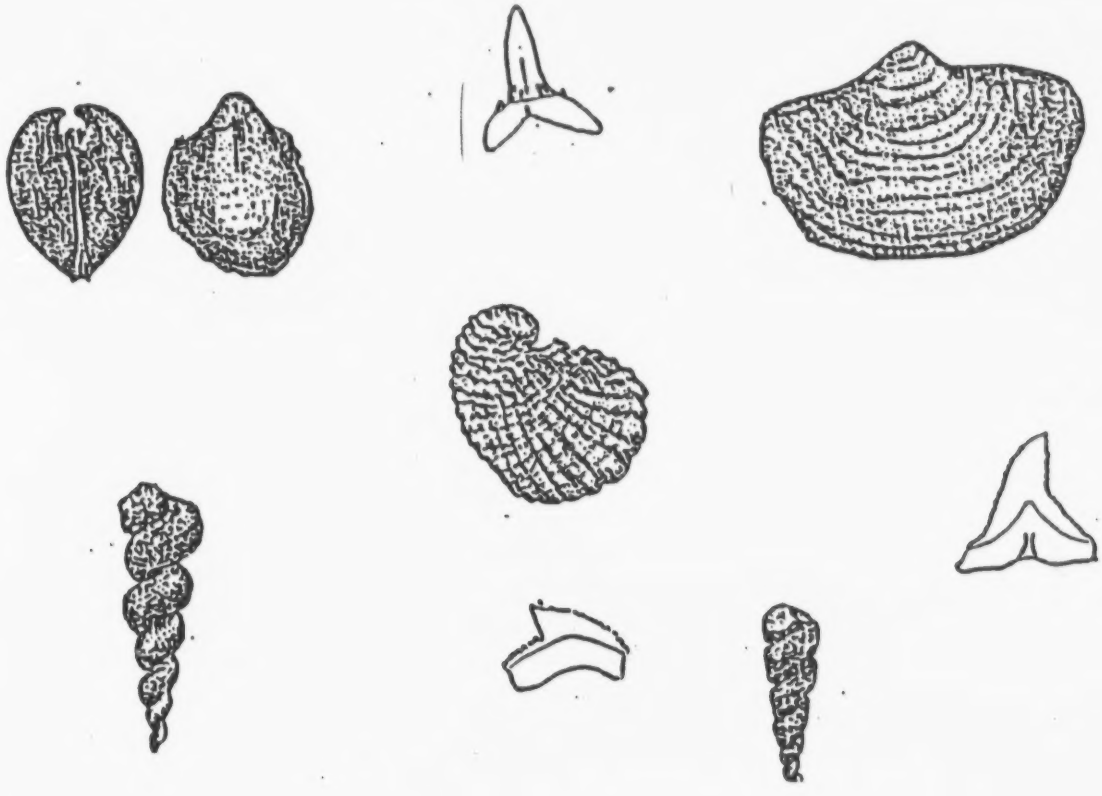
   Sentence _____

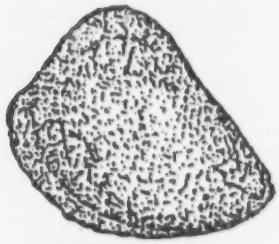
   _____

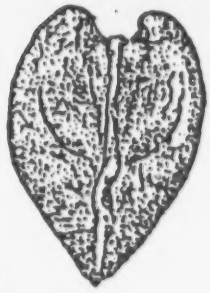
3. Fossil Collecting word _____

   Sentence _____

   _____







HARTSHORNE WOODS PARK - Locust (Middletown Township)
Meet: At Twin Lights Historic Site, Highlands, NJ (872-1814)
Activity: Forest Study, Indian life, erosion
Bring: Notebook, Ziplock Bag, hiking sneakers.

Suggested Preparation:

Hartshorne Woods is a dense oak forest that is typical of what most of our area looked like 200 years ago. Students will take a strenuous hike up and down steep wooded hills, exploring this woodland, identifying flowers, learning about wildlife, and seeing the effects of erosion.

Here are some terms the students should be aware of:

Oak
Forest
Mushroom
Slope
Erosion
Soil
Decay
Decomposition
Elevation
Lenni Lenape Indians
Pioneer
Self-sufficient

The area here is called Buttermilk Valley and is one of the most undisturbed natural areas in Monmouth County.

The valley was one of the primary migration routes of the Lenni-Lenapes as they travelled to the shore in the summer to fish and hunt. It is also the evacuation route of the British Army to Sandy Hook after being routed by Washington's troops at the Battle of Monmouth.

Here we will study soils, nutrient cycles, and valuable and exotic plants like the rare Indian Mocassin (Lady Slipper), a wild orchid.

Students will see some negative effects of human activities, such as soil erosion.

Tree "Fingerprints"

Choose four different trees or parts of trees. To make a "fingerprint", press this paper to the bark and rub gently in one direction with the side of a pencil or crayon.

Try to find a leaf from each tree and draw that to help identify your trees.

Tree Name_____

Leaf

Tree Name_____

Leaf

Tree Name_____

Leaf

Tree Name_____

Leaf

Homework - Hartshorne Woods

Make a list of all of the different things you sensed on your visit here. (A)
Write a paragraph about your visit. (B)

A. I SAW _____

_____

_____

I TOUCHED _____

_____

_____

I HEARD _____

_____

_____

I SMELLED _____

_____

_____

I TASTED _____

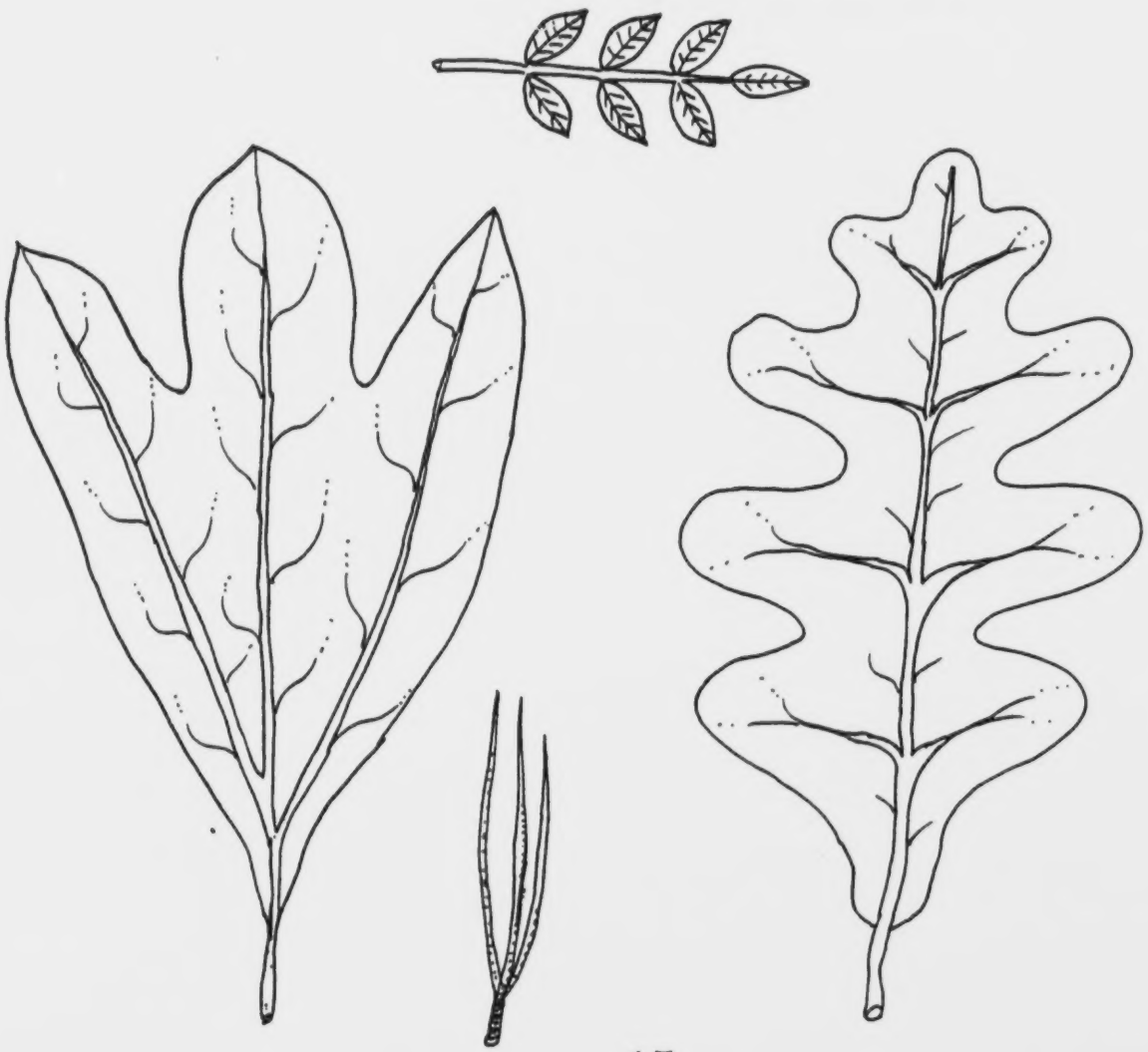
_____

_____

B. TODAY I VISITED _____

_____

_____



TOMBSTONE RUBBINGS

Rubbing a tombstone is simple and rewards you with an accurate record of some American folk art.

First pick an interesting or unique carving, name or epitaph. Try to find one that is not too worn down or covered with lichens. (Don't attempt to "clean off" any tombstones, you might damage one.) Place your paper against it firmly. "Rub" the side of your crayon or chalk across the paper evenly and in one direction only. Don't move the paper once you've begun. Be sure you've rubbed the whole area you're interested in. Don't fold your "rubbing". Roll it carefully into a tube with the picture inside. Remember: Rub in one direction. Use an oversized sheet to avoid marking the tombstone.

You can also try aluminum foil. With foil, you don't need crayons. After rubbing with your hands to get the imprint, carefully place the foil in between sheets of smooth cardboard.

Materials: Newsprint or foil. Crayons. Cardboard sheets or mailing tubes.

This is a rubbing from a colonial tombstone in Deerfield, Mass. (c. 1690-1750).

THE NEW YORK TIMES, SUNDAY, NOVEMBER 17, 1985

Colonial Tombstones, After Weathering the Centuries,

Succumb to Thieves

By JAMES BROOKE
Special to The New York Times

SCOTLAND, Conn. — A cold wind blew through the stands of pines enclosing Palmertown Cemetery. From a distant field, the lowing of a cow could be heard.

As the sun faded in the late afternoon, Alfred M. Fredette pointed to gaps among the fallen and leaning gravestones.

"Fifty-four stones — all cherubs," he said of the stones, all carved between 1711 and 1760, that have vanished from the burying ground. "It's the isolated cemeteries that get hit the hardest."

Carved in granite, schist and slate, the death masks, winged cherubs and emptied hourglasses of Colonial gravestones have weathered centuries of harsh winters and neglect.

'A Collecting Society'

But now, gravestone experts say, the 17th- and 18th-century stones face a modern threat: collectors who prize them as primitive folk art. Fetching prices up to $3,000 in Manhattan, stones from rural New England cemeteries such as this one have been stolen only to reappear as patio flagstones or coffee-table tops.

"We are a collecting society — theft for sale is much more widespread than damage by Halloween vandals," said Mr. Fredette, a retired teacher here who devotes much of his time to documenting disappearing tombstones.

"Vandalism and neglect used to be the main problems — now the most serious threat is theft," said Frank G. Matero, an assistant professor of architecture at Columbia University. For the last five years, Mr. Matero has headed a Columbia team researching gravestone restoration techniques in Colonial cemeteries of New York City, Hartford and Boston.

Last year, Mr. Fredette conducted an inventory of this cemetery and two others in eastern Connecticut. His results showed that 111 Colonial-era stones had disappeared in recent years.

Confronted with this quiet erosion of the state's heritage, the Connecticut General Assembly passed a law last year making the theft or sale of a gravestone or its fragments a felony punishable by up to five years in prison and a fine of up to $5,000. Thirty-three other states — including New York and New Jersey — have similar laws.

The New York Times/Gale Zucker

Facing modern threat: The Plains Cemetery in Franklin, Conn., has fallen victim to thieves.

The Association for Gravestone Studies, a nonprofit group dedicated to preserving ancient tombstones, is working to stigmatize ownership of gravestones.

"Black market is an appropriate term for it," said Theodore Chase, a retired Boston lawyer, who is president of the 600-member association. "It is almost impossible to obtain good title on a gravestone — if you see one for sale, most likely it is stolen."

At an auction in Cooperstown, N.Y., in 1981, a stone stolen from a cemetery in Lebanon, Conn., was put up for sale along with other items of Americana — Windsor chairs, a Hepplewhite drop-leaf table and an Amish stitched quilt. After a year of detective work by Mr. Fredette, a Connecticut state trooper seized the stone from a Manhattan gallery and returned it to Lebanon.

More recently, association members have succeeded in stopping sales of gravestones or fragments of stones in other New York galleries and auction houses.

In 1983, a headstone that had been missing since 1966 from the Cove Burial Ground in East Haddam, Conn., was spotted in a SoHo Gallery. Carved with an angel head and the name of Constantine Baker, the stone was priced at $1,800.

Mr. Fredette helped document the stone's origin, and a state trooper seized this headstone and returned it to East Haddam.

"I deduced it was a found object, and I bought it as a collectible thing," said Roger Ricco, the owner of the gallery at the time, and now a private dealer. "Four years ago, it was much more common. The work the preservation groups are doing is very valuable. We shouldn't be dealing with gravestones because it encourages theft."

Recently in Manhattan, at the Fall Antiques Show, only one of the 100 dealers had a gravestone for sale, according to Robert Bishop, who is director of the Museum of American Folk Art in New York. Mr. Bishop said he talked with the dealer and was satisfied that the stone had been legally acquired.

"I don't see gravestones in the market very often any more," he said. "Every dealer who knows the field knows it can be confiscated."

Preservationists say they have driven gravestone trafficking underground. But they worry about the sale of fragments.

"Our cemeteries could be ruined if gravestones were smashed for fragments," Mr. Fredette said, pointing to a headstone missing a carved ornament from the top.

Last June, Sotheby's offered two early-American carvings of angels in an auction brochure. An association member called to identify the mounted stones as gravestone fragments and the auction house immediately withdrew them from sale.

VOCABULARY WORDS

Black market _____

Cherub _____

Death mask _____

Desecrate _____

Epitaph _____

Folk art _____

Heritage _____

Hourglass _____

Lichens _____

Vandalism _____

SANDY HOOK PARK - ROUTE 36, Highlands, NJ (872-2284)
Meet: At Building 53, Ft. Hancock
Activity: Marinelife, History of Ft. Hancock, Arts and Crafts
Bring: Notebooks, Ziplock bags, Wading sneakers, Hat, shorts or bathing suit (can be worn under clothes)

Suggested Preparations:

Sandy Hook offers a variety of environments - natural and human. Students will collect and study local marinelife. Notable historic and military features at Ft. Hancock will also be interpreted.

Students should be prepared to get wet!

Here are some terms the students should be aware of:

Beach
Ocean
Marsh
Sand
Surf
Salt-water
Lighthouse
Fortification
Defense
Spanish-American War
1890's

The most exciting activity at Sandy Hook is collecting the great variety of sea creatures found along the shore. The students will want to get their feet wet, but we usually plan this as the final activity. If time permits, we will visit both the bay and ocean sides. Living creatures cannot be taken home, but seashells and other treasures can. Teachers may wish to bring an extra bucket for taking back items for follow-up activities (arts & crafts, posters, touch tables, etc.).

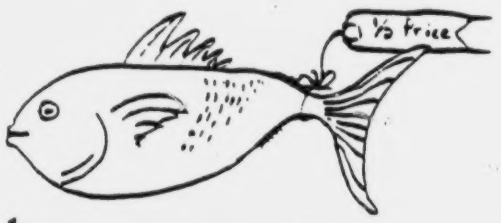
Ft. Hancock was built during the Spanish-American War to protect New York Harbor from enemy fleets. This part of our military history is poorly studied, but students may be aware of Teddy Roosevelt's Rough Riders and "Remember The Maine!" We will visit some of the famous fortifications here and the lighthouse.

Depending on time available and weather, we will plan some Arts and Crafts activities too. These can also be used as follow-up activites.

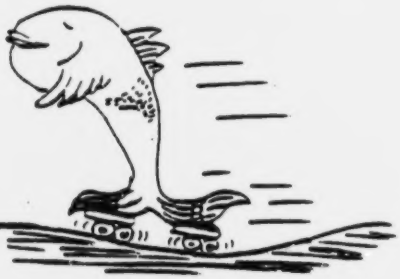
FISH TALES

Name_____

Can you identify these common "fishes" from the ocean?
You have probably seen or read about all of them before. Write your answers next to the numbers and compare them with your friend's answers.



1-_____



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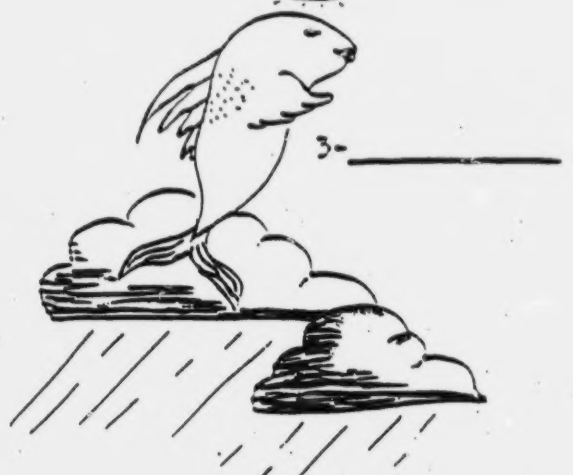

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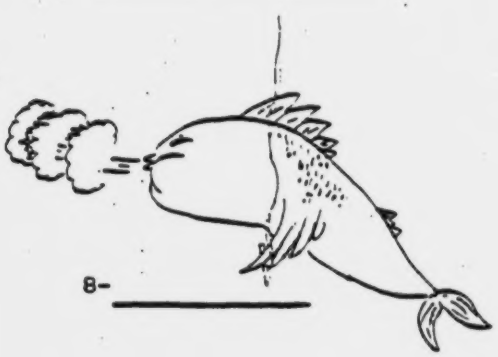
4-_____

5-_____

6-_____



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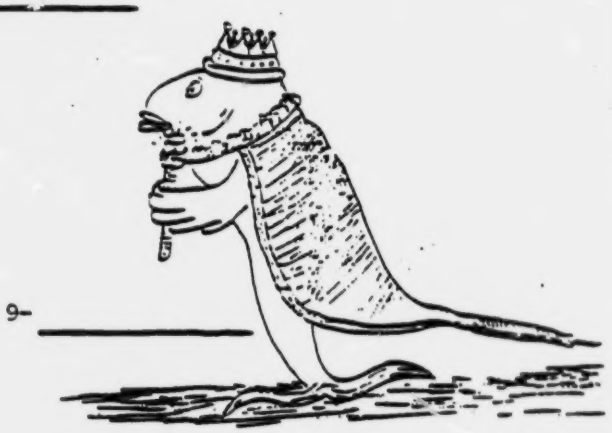

9-_____

COASTAL CREATURES

Animals with a backbone

1. _____
2 _____
3 _____
4 _____

Animals without a backbone

5 _____
6 _____
7 _____
8 _____
9 _____
10 _____
11 _____
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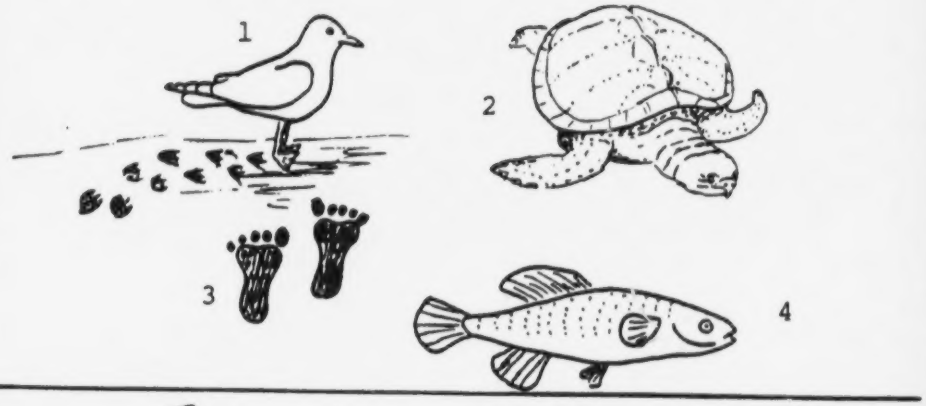
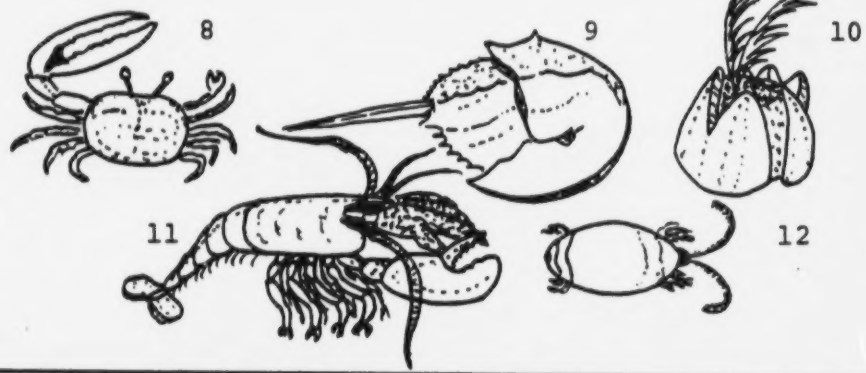
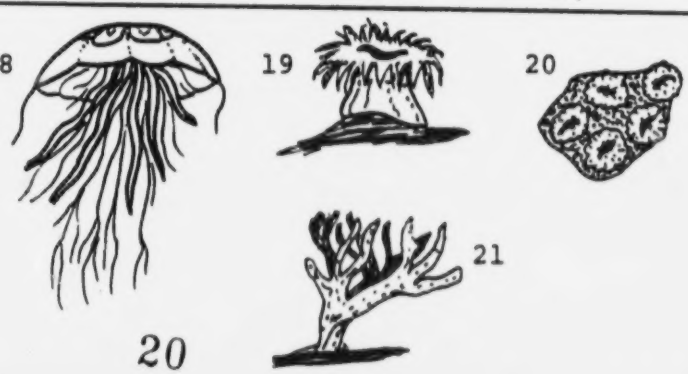






VERTEBRATES

1. Bird
2. Reptile
3. Mammal
4. Fish

INVERTEBRATES

Spiney-skinned animals

5. Starfish
6. Urchin
7. Sand Dollar

Jointed-footed animals

8. Fiddler crab
9. Horseshoe crab
10. Barnacle
11. Lobster
12. Mole crab

Mollusks

13. Razor clam
14. Hard clam
15. Whelk
16. Snail

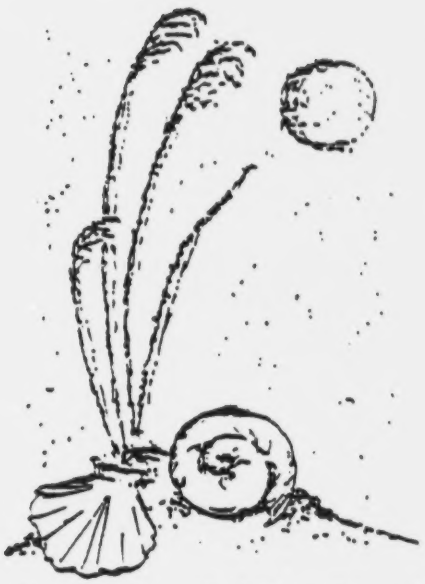
Segmented worms

17. Sand worm

Corals and Sponges

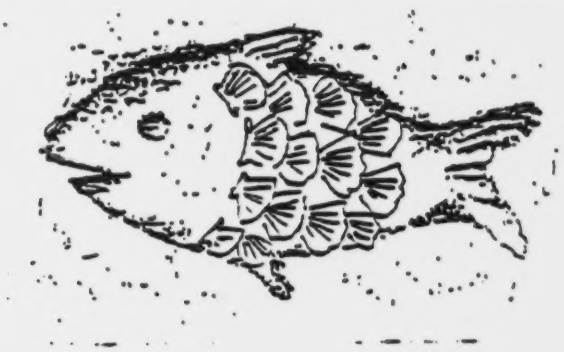
18. Jelly fish
19. Anemone
20. Star coral
21. Dead man's fingers sponge

Sand Casting



You will need:

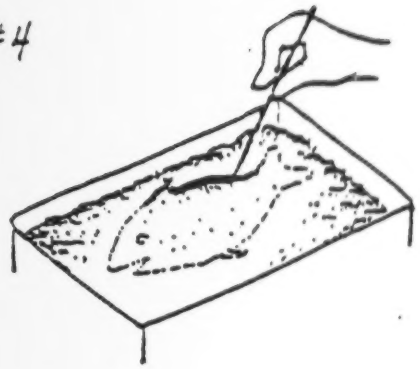
1. Fine beach sand
2. Bucket
3. Plaster of Paris
4. Stick and container for mixing plaster
5. Water
6. Heavy string or a paper clip - to be used as a hanger (optional)
7. Shallow sturdy box or container to be used as a mold
8. Objects to press into the sand for desired shapes
9. Shells, colored beach glass, or pebbles for decoration
10. Spatula, or a piece of stiff cardboard
11. A soft bursh (a small water color brush)



Procedure:

1. Put sand in the bucket and add enough water so that sand is firm but not runny. Mix well.
2. Fill the box or container with sand, packing it tightly and leaving ½ inch of unfilled space at the top of the box.
3. Use a spatula or a piece of stiff cardboard to level the sand in the box.
4. Press objects into the sand to form depressions; or the depressions may be molded with the hands. When the cast is completed, these depressions will stand out from the surface of the cast, forming the design of the finished work.
5. If shells, glass, etc. are to be used as part of the design, or as decorations on the surface of the finished cast, they should be added now. Place shells, glass, etc. face down in the sand. Press down lightly if you wish the shells to be raised slightly off the surface of the cast.

#4



6. Mix the plaster as follows:

   a. For the average sized cigar box, a mixture of about 2 cups water and 2½ - 3 cups plaster powder will be needed.
   b. Pour the desired amount of water into the mixing container.
   c. Add the plaster to the water by sifting it through the fingers or gently shaking it from a can or small cup.
   d. Continue adding the sifted plaster to the water until the plaster builds up in a mound above the surface.
   e. Stir the plaster thoroughly until it is smooth, completely free of lumps, and is about the consistency of heavy cream.
      Note: Stir gently to avoid bubbles.
   f. If mixture is too runny, add more powder, a little at a time. But if mixture becomes too thick or begins to harden before it can be used, throw it away and mix a new batch, because the proper consistency cannot be regained.

7. Carefully spoon the plaster of Paris into the sand mold, filling all the depressions first. If plaster is poured directly from the bowl, the weight will break down the design molded in the sand. So it must be added slowly and carefully.

8. After all the depressions have been filled, and a thin layer of plaster covers the sand, the remaining mixture may be poured carefully into the mold until the plaster is about 1½ - 2 inches thick.

9. While the plaster is still very wet, add a paper clip or a loop of heavy string, knotted at each end, to the top of the plaster cast. This will later serve as a hanger.

10. Allow the plaster to dry for one hour. Carefully remove the plaster sculpture. It will be mounded with sand, and the raised design will not yet be visible. Place it right side up and allow it to dry for another half hour.

11. Take a soft brush and brush the surface of the mold to remove excess sand. Now the design can be seen. The sand still adhering to the plaster gives an interesting texture.

Gyotaku

Japanese Fish Printing

The technique of Japanese fish printing has been used in Japan for over a hundred years to record the sizes and external characteristics of fish and to gain biological information.

The art of gyotaku (pronounced ghio-tá-koo) is a good way to gain an understanding and appreciation of the fine structural details of marine organisms and their great variety. You can also use this technique for making prints of shells, rocks, flowers, etc.

Before making the print, identify the fish. What are its distinguishing characteristics? What is this fish's particular habitat? Afterwards, you might wish to label the finished print with this information, or have the students identify and label the various structural parts of the fish.

You will need:

1. A very fresh fish. Flounders, bluegills, or rockfishes are good to start with. If you buy the fish at a market, select one that has bright red gills, clear eyes, and a fresh smell. If the fish has been gutted, make sure that it has not been cut elsewhere on the body.
2. Newspaper
3. Water-base ink (linoleum block ink is best)
4. A stiff ½ inch brush
5. A very small brush
6. Rice-paper, newsprint, or other moisture-tolerant paper. (Since rice-paper is expensive, you might prefer to start with newsprint)
7. Heavy cardboard from a paper carton.

Instructions:

1. First, wash the fish with soap and water, and dry it.

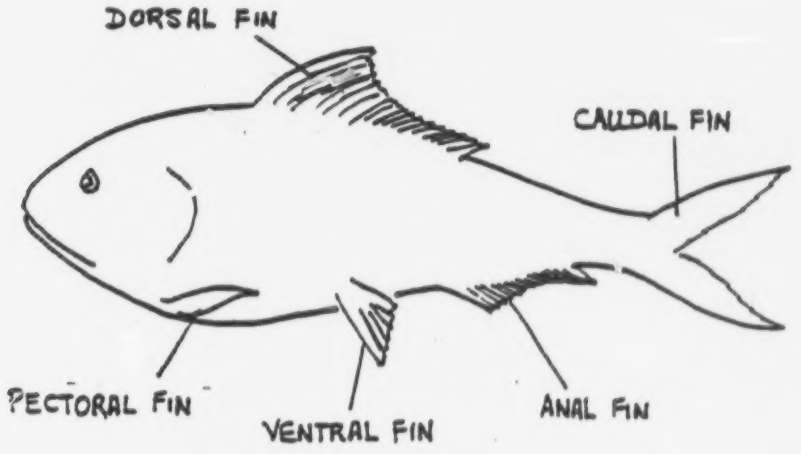
2. Lay the fish down on the scrap newspaper. If you wish, the fins can be opened out and held in place with a straight pin. Lay a piece of heavy cardboard beneath the newspaper and push the straight pin as far as possible into the fin and the cardboard to that it won't be visible on the finished print.

3. Using a stiff brush, brush a thin layer of ink on the fish.

4. Place the paper on top of the fish and carefully press the paper down, without moving it, onto all parts of the fish.

5. Remove the paper and admire the fish print.

6. If you like, you can then paint in the eye of the fish with a small paintbrush.



Homework - Sandy Hook

Make a list of all of the plants and animals you discover at Sandy Hook. Choose your favorite or one you think is most interesting and write an AUTO-BIOGRAPHY about it.

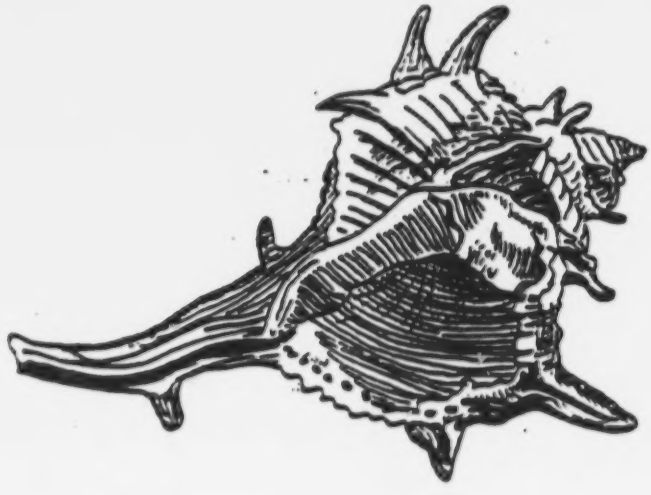
My List of Sandy Hook Creatures

	PLANTS	ANIMALS
BEACH		
WATER		
LAND		

AUTOBIOGRAPHY OUTLINE

1. I am a type of creature called _____
2. I live _____
3. I look like _____
4. I can do these things _____
5. I get my food this way _____
6. I breathe this way _____
7. I can be used for _____
8. My common name is _____

AUTOBIOGRAPHY



HOLMDEL PARK - Longstreet Rd., Holmdel
Meet: At Parking Area next to Farm.
Activity: Canoe clinic to train for next week's canoe trip, Beech forest and pond hike, water cycles
Bring: Wading sneakers, hat, shorts or bathing suit.

Suggested Preparations:

Holmdel Park is the site of a restored 1890's farm. Fields that were once cropland are now grassy meadows for recreation. The woodlands where firewood was cut still contain groves of very old and unique trees. The pond we will canoe on is the former ice-pond where in the winter ice was cut to be stored for the rest of the year.

Here are some terms the students should be aware of:

Farm
Crop
Garden
Icehouse
Outhouse
Well, Cistern
Cycle, Water cycle
Recycle
Photosynthesis
Nutrients, Fertilizer
Bow (of a canoe)
Stern (of a canoe)
Paddle
Aquatic
Terrestrial

The Longstreet Farm was large (800 acres) and prosperous. The farmer needed fields for grazing animals and growing crops, and woods for fuel. Water was extracted from wells, rainwater collected in cisterns, and ice for refrigeration was cut from the pond. The various needs of the farmer resulted in a variety of environments being maintained - field, forest and pond. Students will investigate these environments and take a look at the restored farm if time permits.

Training for the next week's canoe trip and a pond study will be at the same spot. Students normally don't get wet here, but should wear old clothes just in case.

U.S.S.C.S.

ANALYZING AN ECOSYSTEM

An ECOSYSTEM is made up of plants(PRODUCERS), animals(CONSUMERS),and recyclers(DECOMPOSERS). Please answer the following:

1. What supplies power to this ECOSYSTEM? _____
2. What are the three NON-LIVING parts of this or any ECOSYSTEM? _____,_____,_____.
3. Find the following and list them according to their function in this or any ECOSYSTEM:

PRODUCERS: _____

_____

CONSUMERS: _____

_____

_____

DECOMPOSERS: _____

_____

_____

Pond Study

Location:_____ Weather_____

Air Temperature_____ Water Temperature_____

Depth_____ Clarity_____

	Name	Habitat	Picture
Plants			
Animals			

Describe the environment you studied here. Explain why you think these plants and animals are living here.

Homework - Holmdel Park

Write a poem about your experiences today. Choose a topic or a creature and use this outline. Words don't have to rhyme in this type of poetry.

Here's an example:

Choose a word to describe yourself.	BIRD
Write two words that describe your appearance	BOLD, GRAY
Next write three words that describe how you live or where you live	GLIDING, DIVING, CHASING
Then, two words describing your function in the environment	SCAVENGER, CLAMMER
Finally, what you are	SEAGULL

Your Poem

_____

_____, _____

_____, _____, _____

_____, _____

_____

CANOE TRIP - Navesink River, See Enclosed Map
Meet: At entrance to Henry Hudson School,
1 Grand Tour, Highlands
Activity: Estuary study, tides and currents, island ecology
Bring: Wading sneakers, hat, bathing suit or shorts (can be worn under street clothes).

Suggested Preparations:

The canoe trip will introduce the students to unique environments (an island and an estuary) and allow them to meet some marine creatures in their own habitat.

An estuary is a very dynamic environment. It is always changing and resident creatures must adapt to these daily fluctuations or move along with the currents. On the other hand, an island tends to be a static environment and changes very little. Both environments can be very harsh compared to the woods, fields and ponds the students have previously studied.

Here are some terms the students should be aware of:

Static
Dynamic
Fluctuate
Island
Estuary
Tide
Current
Reef
Navigation
Wake (of a boat)

On the island, we will explore the ways plants, animals and people survive in difficult environments. Requirements for living and strategies for survival will be discussed.

Students should be prepared to get their feet wet and bring a towel, extra snacks and drinks. Ziplock and plastic bags will help keep things dry, so don't forget extras.

NOTES

THE WATER CYCLE*

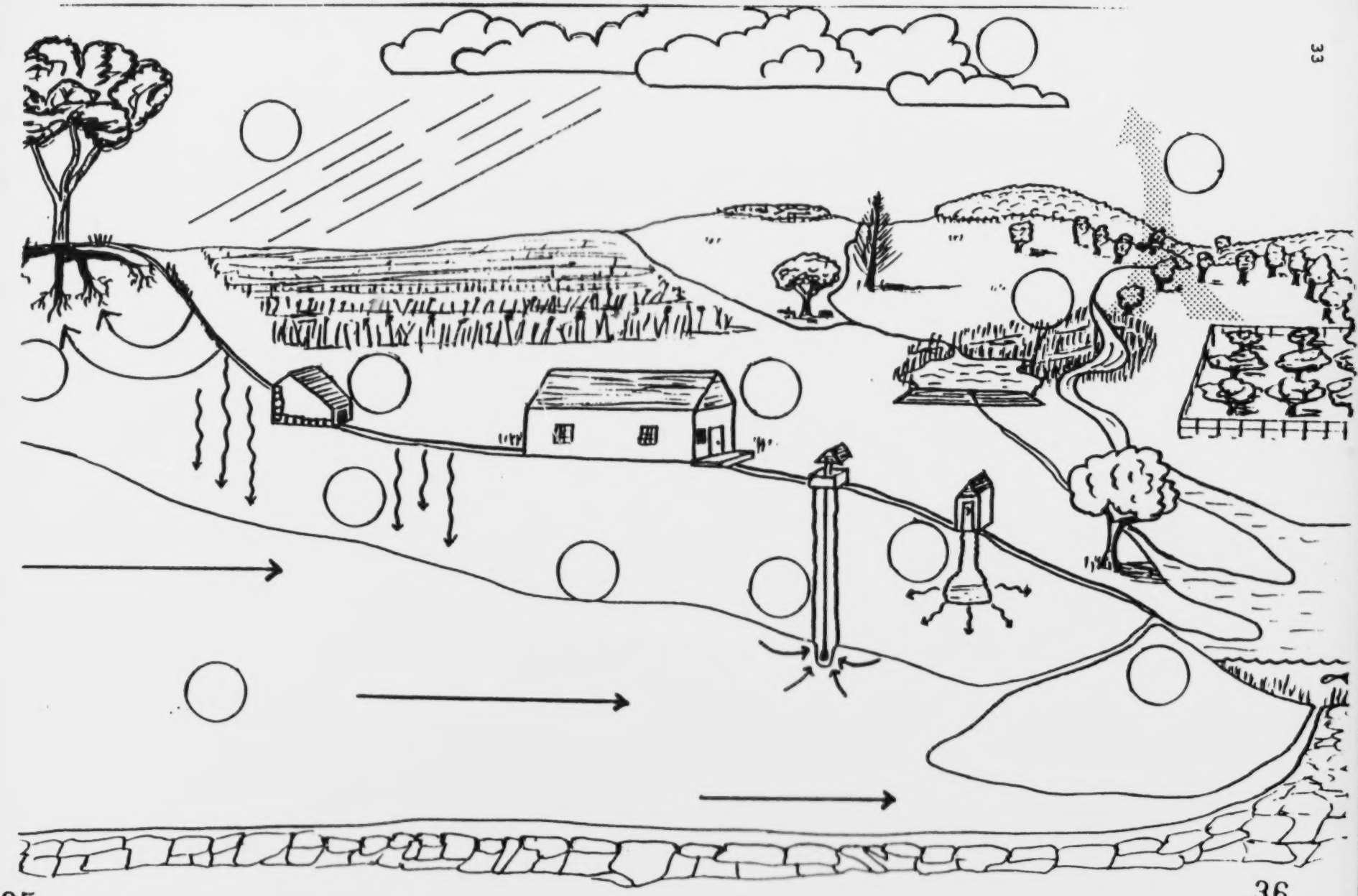
A. Label the picture using the numbers.

1 - Clouds, water vapor
2 - Precipitation, rain and snow
3 - Water in the soil
4 - Drainage into the ground
5 - Water table
6 - Ground water
7 - Springs (where ground water comes to the surface)
8 - Surface water (ponds and rivers)
9 - Well water (from the ground)
10 - Household use (from well water)
11 - Ice house (from pond water
12 - Waste water (from well water)
13 - Evaporation from ponds, rivers, trees, soil, etc.

B. Color the water at its different stages in the "watercycle".

Red - Evaporated water
Green - Surface water
Blue - Ground water, precipitation
Orange - Water used by people (Drinking, washing, waste).

*Note: To complete this you will need colored pencils or crayons (Red, green, blue, orange)



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ISLAND ACTIVITIES

SURVIVAL ON A DESERT ISLAND

1. You have one minute to pack up and get into the lifeboat.

   From this list, circle 5 items that you think are necessary for survival and rescue. You can only choose 5 things to take, so think carefully....

Raincoat	Jug	Shovel	Candy
First Aid Kit	Tent	AM Radio	Camera
Gum	Rope	Gun	Telescope
Coins	String	Saw	Clock
Mirror	Rubber bands	Water	Flashlight
Pencil & paper	Newspaper	Ruler	Calculator
Cup	Cloth	Knife	Bottle
Fish hook	Matches	Book	Brick

List those 5 things you chose and explain why you did.

ITEM	USE

ISLAND ACTIVITIES

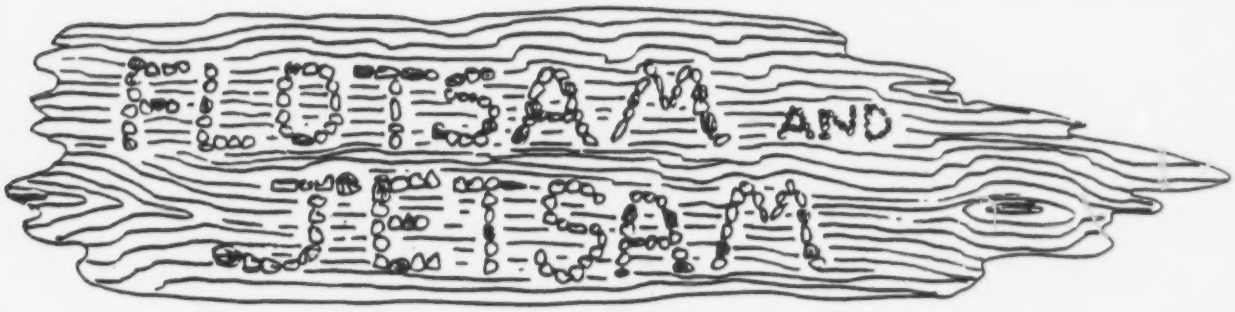
2. Explore this area entirely. List the resources for survival that you can find here.

FIND:	Name	Use
Producers		
Consumers		
Rocks/minerals		
Things that wash up here.		

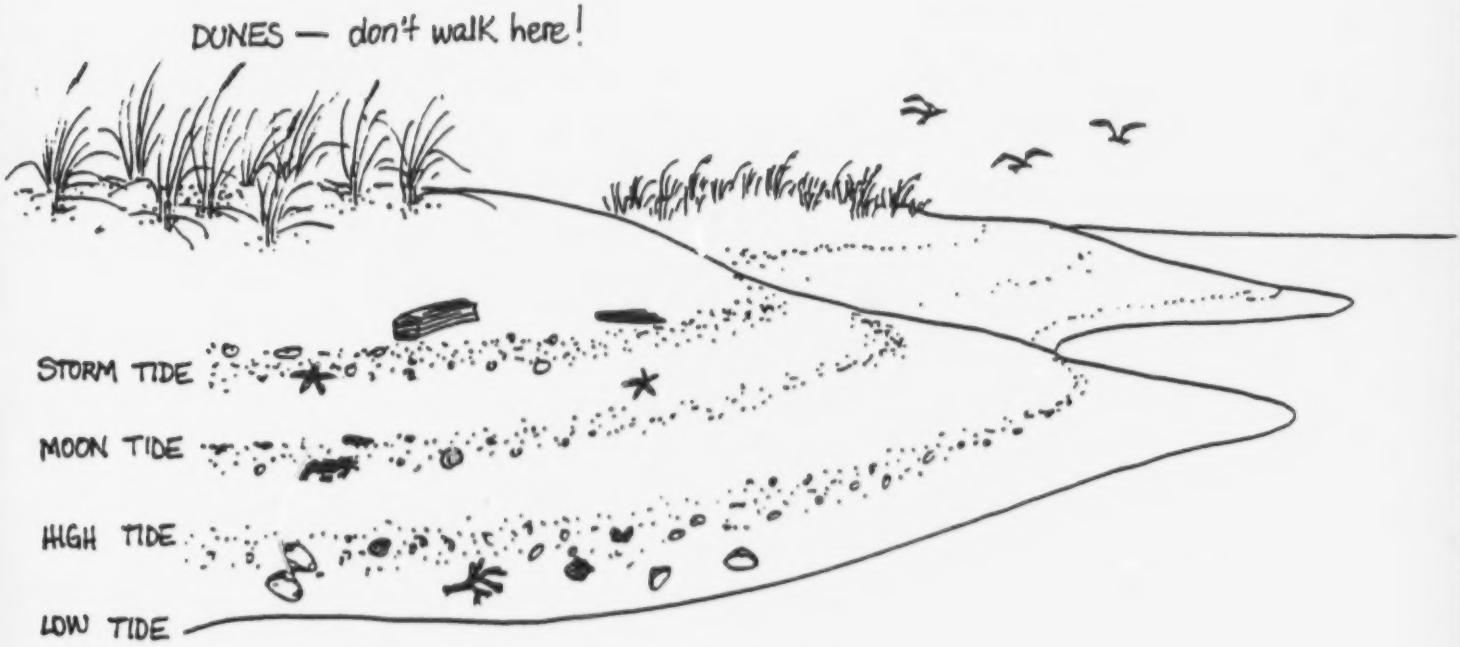
3. From what you have found here, could you survive on our island? Explain how you would survive and what you would need the most. Would the items you brought help you survive or just make life a little easier?

FLOTSAM and JETSAM

By David Grant and Susan Draxler



You can easily build an attractive and informative reminder of your visit to the shore. All the materials you need for a FLOTSAM and JETSAM display board can be found on the beach. Any building materials listed here can be purchased in most hardware or art stores. Have fun!



The ocean does a good job of sorting out treasures for your display board. The best driftwood can be found at the Storm Tide mark, along with dried starfish and large shells. The Moon and High Tide marks are good places to find shells, seaweeds, crab molts and feathers. The Low Tide mark is rich in gravel, pebbles and shells of all sorts. Careful though! Some of the shells may still have inhabitants and should be returned to the sea.

Fine wind-blown sand is found in the dunes, but you should never walk on any grassy areas near them.

MATERIALS NEEDED:

Specimens (Dried) and free of any flesh or tissue!)
Styrofoam board, square of plywood or flat piece of driftwood
Magic markers or felt-tip pens - colored
Acrylic Spray - clear
Silicone glue, Elmer's glue
Sand (Dried)

PREPARING A BASE

Driftwood makes an attractive natural base and if dry will take most glues.

Choose a wide piece with a flat side and rounded edges. Clean the display side with sandpaper or a wire brush to remove any material (sand, tar, seaweed) that might prevent the glue from sticking.

Add a border of rope or wood if you can find any on the beach or elsewhere.

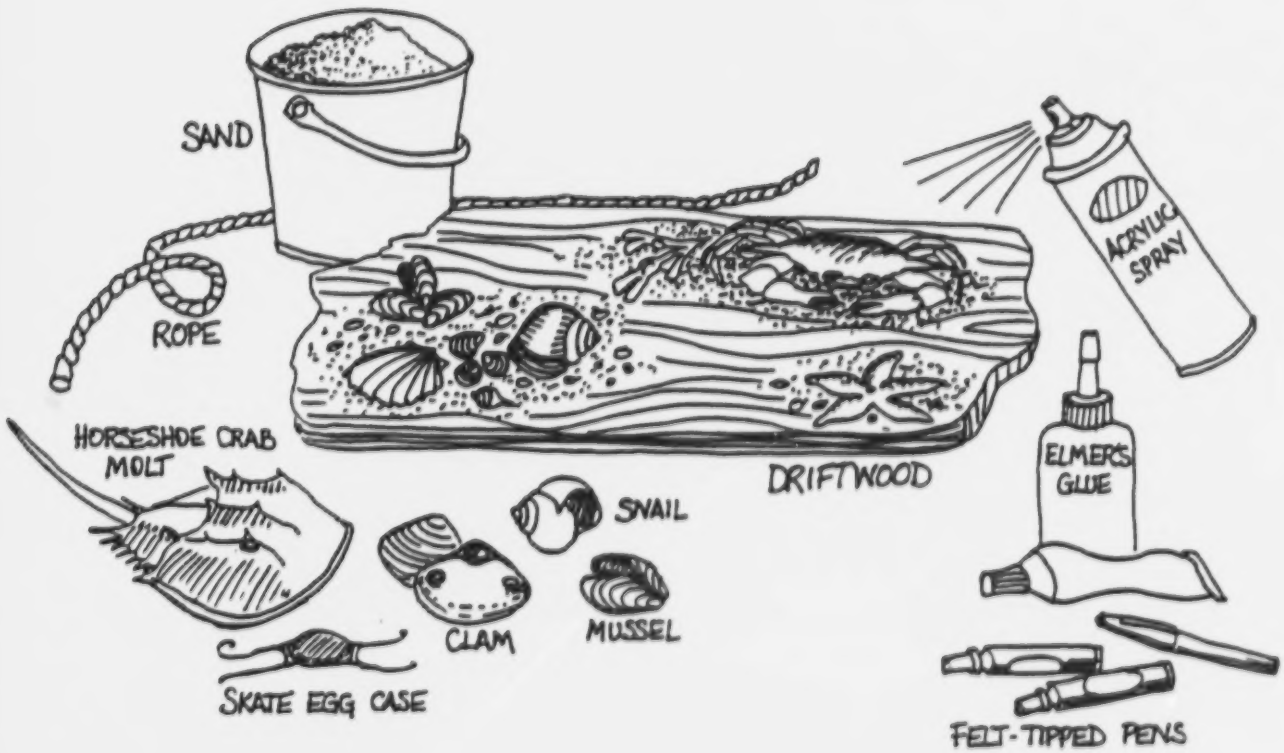
Plywood or styrofoam also make sturdy, lightweight bases.

PREPARING YOUR SPECIMENS

It is very important that all of your specimens and materials be throroughly dry and free of any flesh or tissue. Shells that still smell can be rinsed in a mixture of chlorox and water or boiled in water. Starfish, wood and permeable objects should be sun-dried. Abundant specimens are always available at the beach. Please don't collect living creatures for your collection. Return them to the water.

Once dried, most specimens will look fine on your display. Sun-bleached ones are attractive, especially if grouped together. If you like, colors can be brightened using felt-tipped pens, but too much color looks unnatural.

Clear acrylic spray seals in colors and gives the specimens a natural and wet look. (Do this last after everything is attached to the base.)



TIPS ON ATTACHING THE SPECIMENS

Use plenty of glue to insure the specimens do not come loose. Clean, dry and flat surfaces bond to the best and do not forget to leave plenty of time for drying. Sprinkle sand on any excess glue to hide it. Group specimens of similar types, shapes, colors or sizes together. It will look much better when finished and will give you extra surfaces to glue to.

Silicone glue works best, but is more expensive and takes longer to cure. It can be molded by pressint it with an ice cube. This results in a strong bonding.

When finished and thoroughly dry, spray the whole display with clear acrylic. This will protect it and give it the "wet" look.

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